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PART III

FEDERAL COMMUNICATIONS COMMISSION

■

Medical Communications Services

Title 47—Telecommunications

CHAPTER I—FEDERAL COMMUNICATIONS COMMISSION

[Docket No. 19576, etc.; FCC 74-707]

PART 2—FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS

PART 89—PUBLIC SAFETY RADIO SERVICES

Medical Communications Services

Report and order (Proceedings Terminated). In the matter of amendment of Subpart P, Part 89 of the Commission's rules (Eligibility of Comprehensive Health Services); Docket No. 19576, RM-2017.

Amendment of Parts 2 and 89 of the Commission's rules to allocate 157.450 MHz to the Special Emergency Radio Service for medical paging systems in hospitals; Docket No. 19643.

Amendment of Parts 2 and 89 of the Commission's rules and regulations relating to communications for Emergency Medical Services; Docket No. 19880.

1. The Commission has under consideration its notice of inquiry and proposed rule making in Docket 19880, adopted November 28, 1973, and published in the FEDERAL REGISTER December 6, 1973 (38 FR 33617). The Notice invited comments on proposals by the Office of Telecommunications Policy (OTP), developed from a report of the Interdepartment Radio Advisory Committee (IRAC), relating to establishment of an Emergency Medical Radio Service under Part 89 of the Commission's rules. The Notice also solicited public views on recommendations contained in the contract study report prepared for the Commission by Advanced Technology Systems (ATS) concerning radio communications requirements for emergency medical services (EMS). As a result of these comments, the Commission stated that final rules could be adopted.

2. Matters under consideration in Docket 19880 also directly relate to proposals contained in two other rule making actions, Dockets 19576 and 19643. Accordingly, these proceedings are being consolidated for disposition in this action. In Docket 19576, we adopted a notice of proposed rule making on August 29, 1972, to provide eligibility for comprehensive health services in the Special Emergency Radio Service (SERS). This Notice was published in the FEDERAL REGISTER on September 13, 1972 (37 FR 18570). In Docket 19643, a Notice was released on November 29, 1972, to allocate the frequency 157.450 MHz to the Special Emergency Radio Service for medical paging systems in hospitals. This Notice was published in the FEDERAL REGISTER on December 1, 1972 (37 FR 25546).

BACKGROUND

3. The basic proceeding in Docket 19880 was initiated in recognition of the need for an up-dated licensing and regulatory structure to accommodate the nation's rapidly changing and expanding requirements for medical radio communications. Many factors have lent impetus to our effort. For one, there is an increased awareness and response on the part of the medical community to the potential of radio for the more effective treatment of patients. An example is the use of biomedical radio telemetry techniques to transmit electrocardiograms to hospital-based physicians for diagnosis and treatment of stricken cardiac patients before their arrival at a medical facility.[1]

4. Federal and State programs for standardizing medical communications capability are also playing a part. In recent years, we have seen establishment of Federal and State EMS organizations who are specifically charged with providing guidance in the use of new radio communications techniques and procedures for medical functions. Their activities have led to widespread implementation of emergency telephone access systems ("911"), and they are responsible for insuring compliance with such new federal specifications as those requiring two-way radio capability in all medical ambulance vehicles.[2] We have followed, too, the introduction of new funding programs, private and State, as well as Federal, which are providing dollars for planning, training, equipment, and operations in EMS radio systems. One federal program just underway is based upon the Emergency Medical Service Systems Development Act of 1973, an amendment to the Public Health Services Act (42 U.S.C. 201). This law authorizes grants under the administration of the Secretary, U.S. Department of Health, Education and Welfare (HEW), for research and development of area-wide EMS communications systems.

5. All of these activities are producing a modern communications picture which promises to significantly outmode many of today's limited medical radio systems. This fact was emphasized in the Commission's contract study prepared by ATS, where emergency medical communication requirements involving more flexible and expanded radio capabilities were identified. There is, for example, the development of the "common system" approach to the conduct of medical radio operations. This involves a determination of a medical service area—whether it be a county, a city, a geographic region, or any combination of these—for development of an area-wide coordinated radio communications plan whereby all medical communication activities are integrated through common dispatch or control centers to optimize the area's use of radio spectrum and facilities in meeting the needs for prompt emergency medical treatment.[3]

6. It has also been demonstrated in a number of studies that the present complex of available frequencies, and the rule provisions which cover their use, are not adequate or are, at best, a piecemeal approach for meeting many medical communication requirements. For instance, other than for some exclusive telemetry channels and some high band paging frequencies, medical communications, whatever their nature, are generally conducted on channels shared for non-medical as well as medical activities, and for non-emergency as well as emergency traffic. Currently, nearly all medically-related communications are conducted in the Special Emergency Radio Service, where five frequencies in the 155 MHz VHF band are allocated to be utilized on a shared basis exclusively for hospitals and associated ambulances. However, only one of these frequencies, 155.340 MHz, is used extensively for these purposes. Eight additional 155 MHz band frequencies are allocated to the service to be shared for a number of other categories of licensees including rescue squads, school buses, and disaster relief organizations. However, in addition to the practical limitations on shared frequencies, there are adjacent channel coordination requirements that severely reduce the number of areas in which these frequencies are able to be used.[4] More-

[1] Seven pairs of frequencies in the 460 MHz band were allocated to the SERS for biomedical ambulance-to-hospital telemetry and ambulance dispatch operations in the Commission's Report and Order adopted in Docket 19261 on March 23, 1972. (34 FCC 2d 241)

[2] See Federal Specification KKK-A-1822, developed by the United States Department of Transportation, and approved January 2, 1974, for Ambulance Emergency Medical Care Vehicles.

[3] In regulations proposed for administration of grants under section 1203 of the Emergency Medical Service Systems Development Act of 1973 (Public Health Services Act—42 USC 201), HEW has noted that an area-wide communication plan for EMS systems should "join the personnel, facilities, and equipment of the system by a central communications system so that requests for emergency health care services will be handled by a communications facility which utilizes emergency medical telephonic screening; utilized (or, within such period as the Secretary may prescribe, will utilize) the universal emergency telephone number 911; and will have direct communication connection and interconnections with the personnel, facilities, and equipment of the system and with other appropriate emergency medical services."

"A central communications system," HEW proposed, "includes a system command and control center which is responsible for establishing those communication channels and providing those public resources essential to the most effective and efficient emergency medical services management of the immediate problem, and which has the necessary equipment and facilities to permit immediate interchange of information essential for the system's resource management and control. The essentials of such a communications center are that: (a) all requests for system response are directed to the center; (b) all system resource response is directed from the center; and (c) all system liaison with other public safety and emergency response systems is coordinated from the center. Except to the extent provided (elsewhere), the center need not direct or control medical care or treatment."

[4] These coordination requirements are being relaxed to some extent in Docket 19523. The Commission anticipates issuing a Report and Order in this Docket in the near future.

over, because of the limited number of suitable frequencies available in the SERS, licensees are not permitted two-frequency operations or the use of mobile relay methods.

7. Medical operations being conducted in other frequency bands or radio services include bio-medical ambulance-to-hospital telemetry and dispatch systems that are authorized in the SERS on seven pairs of frequencies in the 460 MHz UHF band, while in-hospital telemetry operations can be licensed under Part 15, and on certain low-power industrial frequencies. Paging operations are permitted on certain SERS frequencies at 35 and 43 MHz, as well as on Business Radio Services channels. In the Fire Radio Service, and to a lesser extent in the Police and Local Government Radio Service many communities provide medical ambulance dispatch service as part of police and fire communication systems.

IRAC AND ATS PROPOSALS AND PROPOSALS IN DOCKET 19576 AND DOCKET 19643

8. Changes proposed in Docket 19880 would replace the present fragmented structure for medical communications with a more unified and comprehensive medical radio service category in the Commission's rules. In major part, this would be accomplished by allocation of additional frequencies in the 450–470 MHz UHF band to permit the development of full-capacity medical systems. It was not contemplated, however, that licensees of present medical systems that are operated in the 155 MHz VHF band would be required to change frequencies or the basic nature of their system; although it is clear that the advantages of the "common system" licensing and operational method would probably encourage such change.

9. The major proposals in this proceeding are contained in the report of the Interdepartment Radio Advisory Committee (IRAC) to the Office of Telecommunications Policy. The report recommends that the Commission establish a new EMS radio service and emphasized the need for allocation of dedicated spectrum which will permit the development of common systems that integrate all medically related communication requirements, both within any medical service area and from one area to another. Similar proposals are included in the recommendations contained in the Commission's contract study report developed by ATS. Frequency allocations recommended are in both the VHF and UHF bands. It is proposed that operations on UHF frequencies be categorized for specific medical activities to include command and control (dispatch), medical instruction, paging, bio-medical telemetering, common-calling (inter-system and intra-system), and hospital-to-hospital.

10. IRAC's report also recommends that the frequency 152.0075 MHz (a 15 kHz splinter channel) be made available for regular paging; the frequencies 150.775 and 150.790 MHz,[5] which are now government military channels, are recommended to be reallocated for low-power (five watts) medical paging; and another government frequency 162.6625 MHz, is proposed for medical operations. As to present frequencies in this band, the report proposes that 155.340 MHz be "reallocated from existing hospital routine and administrative communications use" to use for common-calling between licensees of different systems. It is also recommended that 155.280 MHz be reallocated for use in hospital-to-hospital (point-to-point) communications.

11. In the UHF bands, IRAC has proposed reallocation of 449.850–449.950 MHz for use for medical paging. This band is now allocated primarily for government radiolocation operations and, on a secondary basis, for amateur radio operations. Reallocation is also proposed of the frequency pairs 453.025/458.025, 453.075/458.075, 453.125/458.125, and 453.175/458.175 MHz, from the Local Government Radio Service, where they are assignable for highway call box operations, to an EMS category for medical systems. The IRAC report also advocated removal of the present limitations on the 460 MHz band bio-medical telemetry frequencies to permit their use for other types of medical communications, including doctor-talk circuits, dispatch, and data handling. Finally, it is proposed that the presently unallocated frequency pairs 463.125/468.125, 463.150/468.150, and 463.175/468.175 MHz be made assignable for EMS operations.

12. The proposal in the related rule making Docket 19576 is to establish an eligibility category in the SERS to cover Comprehensive Health Services organizations. These groups provide complete medical care service through their clinical facilities to local communities, usually in rural, low income areas. The other proposal, in Docket 19643, is for allocation of an exclusive frequency, 157.450 MHz, for limited-area, hospital one-way paging systems. It was proposed that present medical paging operations that are conducted on regular VHF two-way voice channels in the SERS would be required to be shifted to this frequency if harmful interference to voice operations occurred.

COMMENTS

13. Proposals in these proceedings have generated a great deal of interest and response as reflected by the more than two hundred formal comments that were received. The comments were very helpful in their extensive treatment of medical radio communication problems and recommended solutions, and have afforded the Commission considerable guidance for resolution of the complex issues involved. A complete listing of the parties who filed comments is attached as Appendix A.

14. Most of the comments concern the inquiry and proposals in Docket 19880. Almost without exception, parties directly involved in medical radio operations endorsed the proposal for a separate and distinct radio service category with dedicated spectrum that could accommodate total requirements for medical comunication systems. Generally, the comments also agreed that the allocation of frequencies in the UHF bands is the reasonable solution to meeting these requirements in light of the limited spectrum available at VHF. A number of parties, however, apparently plan to stay with presently assigned systems in the 155 MHz VHF band and expressed concern as to their prospects for being permitted to continue those operations, at least until equipment investment is amortized. There was also concern as to the specific nature of a medical radio service in terms of eligibility and permissible communications. Here, while eligibility of hospitals, physicians, and medical ambulances was assumed, there was mixed reaction to including such related categories as nursing homes, public health organizations, veterinarians, oral surgeons, and rescue organizations. Some parties also recommended that we restrict licensing in a medical radio service to participants in area-wide medical communication plans, or that we license only state divisions and local governments which coordinate such plans. With respect to permissible communications, issues were raised as to permitting medical administrative traffic in addition to emergency transmission; as to whether paging operations, both voice and tone, and particularly wide-area paging, should be allowed; and as to whether we should make provision for telemetry operations on VHF frequencies.

15. The majority of the comments dealt with the proposed frequency allocations. In general, users directly involved in medical radio operations were enthusiastic as to the communications capabilities afforded by additional exclusive spectrum in the UHF bands. Many parties, however, indicated that they had hoped for additional allocations in the 155 MHz band for expansion of present systems. Nevertheless, most agreed with the necessity for utilizing UHF frequencies and, apparently, intend to establish "common systems" for meeting their total medical communication requirements.

16. The frequency plan developed by IRAC was generally acceptable to most parties. Some comments sought greater flexibility in the recommended frequency allocation structure. For example, there were parties advocating local determination as to the types of communications for which frequencies would be assigned, while others urged primary categorizations of frequencies for such functions as dispatch, medical coordination, doctor-talk etc., with provision for departure

[5] Actually IRAC had originally proposed 150.785 MHz, but in order to preserve the standard 15 kHz channel spacing, it was agreed to change this to 150.790 MHz.

from these categories, as needed, on a secondary basis. There were objections to specific IRAC proposals for "national calling" frequencies to be used to interconnect medical systems from one area to another, and for frequencies for hospital-to-hospital intercommunications. A number of parties felt that dedication of channels for these purposes was not justified for what they considered to be relatively isolated requirements. For paging channels, a large number of comments were submitted by amateur radio operators and organizations opposing use of the government band 449.850–449.950 MHz for this purpose. There were many objections, too, as to the proposed reallocation of Local Government highway radio call box frequencies in the 450 MHz band for EMS operations. These parties wanted to retain the frequencies for highway call box purposes where they could be used for citizen access to medical control centers for required assistance.

17. We received many alternative frequency allocation plans that are well conceived. For one, in its contract study, ATS has developed a frequency program that is designed for interconnecting contiguous areas for mutual medical assistance. Many of the frequency allocation programs included recommendations for, among other things, mobile relay operations in the 460–470 MHz band. Presently, the limited number of frequencies available for medical operations at VHF precludes authorization of relay or repeater systems. One plan incorporates a requirement that equipment be capable of multi-channel operations to cover all UHF frequencies to assure that each licensee's operations are compatible with both intra-system and inter-system area-wide programs. There were variations in paging capability from one plan to another, with request for provision for response on the same frequency in one program; request for limited-area, as against wide-area paging in another plan; and no provision at all for paging in still another program. A few allocation plans saw the need for full-duplex operations between hand-carried units and hospitals in bio-medical telemetry systems. Here, there were recommendations that highway radio call box frequencies in the 450 MHz band be utilized additionally for this purpose. Finally, there were requests for clarification as to permissibility of "multiplexing", continuous-tone squelch, "trunking", slow-scan video, digital data transmission, facsimile, and other techniques which may be associated with land mobile systems.

18. The comments in Docket 19576 supported the proposal that an eligibility category for Comprehensive Health Services be established in the SERS which will permit these organizations to conduct their medically-related communication operations. These communication requirements logically fall within the categories of needs to be covered by the proposed medical radio service and are being considered in that context herein.

19. In Docket 19643, the comments generally supported the proposed allocation of an exclusive one-way hospital paging channel, 157.450 MHz for limited-area medical operations. There were requests, however, for wide-area paging capability as well. Also, a number of parties argued that one exclusive paging channel would not serve to meet anticipated requirements, especially if we were to require, as proposed, present hospital paging operations to shift to the new frequency.

Rule Changes Adopted for Medical Services

20. In our consideration of proposals in these rule making proceedings, the Commission has attempted to establish the nature and extent of licensing and operational standards needed for meeting medical radio communication requirements. As indicated, we have relied in large measure upon information and recommendations developed in the comments. We have also worked closely on a number of committees and in regional conferences with other Federal, State and local government representatives, manufacturers, and medical and technical organizations who are directly involved in EMS planning and operations. Two patterns of importance with respect to an understanding of medical requirements have emerged. First, in many areas of the country, medical systems are being developed, often on a state-wide basis, to operate on the 150 MHz band frequencies that are presently available in the Special Emergency Radio Service. Many of these licensees indicate that they want to stay with VHF systems. They note that although these are limited systems, they are nevertheless effective for operations within the parameters of the particular licensee's needs. The second picture that emerges involves users who have made only tentative efforts in the planning and development of medical communication systems. These parties have been discouraged by the interference problems and operational limitations of VHF channels in their particular locations. Many of these licensees are already conducting bio-medical telemetry operations in the 460 MHz band and they see these rule changes proposals for additional UHF allocations as the necessary means to expand to a "total" EMS radio system. Their views were summarized in the comments from Dr. John Turner of Dade County, Florida:

> The Special Emergency Radio Service no longer meets the needs of medicine. Basically, the Special Emergency Radio Service is intended for use by highly independent entities who usually have only the most simple demands to make of radio. The total amount of equipment authorizable for a single licensee tends to be quite limited. The limited total capital investment by an individual licensee has failed to justify the development of technically qualified staffs. In general, radio for medicine within the Special Emergency Radio Service has led to simple unsophisticated, unimaginative use of spectrum. It has produced a "way of life" or patterns of usage, which meet limited needs in certain areas. Honorable and capable people serve the public within the framework of the Special Emergency Radio Service but it is difficult (probably impossible) to meet the immediate future needs of medicine within the regulatory framework and/or the spectrum allocations provided within the Special Emergency Radio Service.

21. It is clear from this analysis that whichever direction is taken in the establishment of medical radio systems, the proposals are both timely and urgent. Many parties expressed this urgency and asked for prompt action to effectuate the basic purposes in these proposals. The Commission agrees and we have determined that it is in the public interest to amend the rules as follows to establish a separate service category with dedicated spectrum that can more fully accommodate licensing and operation of medical radio systems. Rule changes being adopted, in accordance with the Notices in the various proceedings herein, amend Parts 2 and 89 of the Commission's rules.

The Medical Services Category

22. In Part 89, primary changes in the Special Emergency Radio Service Rules incorporate the present hospital, physician, and ambulance, categories into a new and more comprehensive division for Medical Services.[6] This category will cover the operations of licensees who regularly provide or coordinate communications for the rendition and delivery of medical services to the public.[7] These include, in addition to hospitals and ambulance companies, any institutions and organizations which regularly provide medical services in clinics, public health facilities, and similar establishments. Thus, under this expanded provision, qualified public or private nursing and old-age homes can be licensed for their medical operations, as well as comprehensive public health organizations of the nature contemplated in Docket 19576.

23. In the eligibility provided for physicians, we have taken this opportunity to include oral surgeons. It has been shown that these practitioners are often required to participate in EMS activities. Also, we have relieved a present restrictive provision, that is no longer considered to be necessary, to expand the use of radio to all members of medical associations.

24. Rescue organizations are made eligible under the Medical Services category, when they need to meet communication requirements of participation in medical activities. A separate rescue organization category is being retained in the SERS for non-medically related search and patrol activities of these groups (Section 89.505). It is noted that to the extent feasible, these provisions meet the basic objectives in the comments received from the Colorado

[6] Veterinarians will continue in a separate category under § 89.507 of the Rules.

[7] Federal entities engaged in these operations are not licensed directly by the Commission but will be participating in these EMS systems under other licensing authorities.

Search and Rescue Board, where it was requested that a class of service "to be denoted Land Search and Rescue Radio Service" be created, "to be coordinated with a proposed Emergency Medical Radio Service."

25. Eligibility under Medical Services also includes associations comprised of other eligible organizations and entities, such as a county hospital association, or an association of ambulance operators, who may hold a single license to cover communication operations of their members. This provision should enhance the development of common systems by simplifying the licensing requirements for participation in an area-wide medical communications plan. Similarly, governmental entities and agencies have been made eligible to hold licenses for coordinated medical operations in their areas of jurisdiction. An example of this latter licensing arrangement is Orange County, California, which will hold the licenses for all of the eligible medical organizations under a communications plan that provides for county dispatch and coordination of public and private medical services radio operations in the area.

26. It is recognized that there often exist requirements for persons other than those shown as eligible to participate in Medical Services activities. A provision is included, therefore, to permit communication units of a licensed hospital, ambulance operator, etc., to be operated in a vehicle or be hand-carried by any person with whom cooperation or coordination is required for medical services activities.

27. Consistent with our emphasis on area-wide, centrally-coordinated medical communication systems, provision is included in the Medical Services category for voluntary submission of communications plans. Many of these plans are being developed by State EMS offices for integrated state-wide medical radio operations; other plans are more narrowly regionalized. In any event, the Commission is arranging to maintain files in Washington, D.C., for public inspection of these plans for the guidance of applicants. Also, a listing of plans that are relevant to an applicant's area of operation will be furnished to enable applicants to request copies from plan developers.

28. A number of parties sought assurance that they would be able to meet administrative requirements indirectly relating to their medical services activities. Many hospitals, for example, use radio in connection with security and other administrative responsibilities, and physicians often use radio for office activities. These requirements are presently authorized to be met in systems licensed in the Special Emergency Radio Service and we have included provisions permitting operations of this nature by license in the Medical Services category on a secondary, non-interference basis.

UHF Frequency Allocations

29. The major allocation proposals being adopted are in the 450–470 MHz band where we have been able to provide a frequency complex that should prove sufficient with proper system planning to afford full capability and flexibility for EMS operations. The finalized allocations reflect recommendations, in the IRAC proposals and in many of the comments, for categorization of frequencies, with certain channels being assignable for both primary and secondary uses. The specific frequencies and the purposes authorized are as follows:

(a) The paired frequencies 460.525/465.525 and 460.550/465.550 MHz are available for dispatch operations in medical systems. They may also be designated for common calling for intersystem mutual assistance.

(b) The paired frequencies 463.000/468.000, 463.025/468.025, and 463.050/468.050 MHz, are retained for primary use in ambulance to hospital bio-medical telemetry operations. On a secondary basis, subject to non-interference to telemetry operations, these frequencies may be utilized for any other permissible communications purposes authorized for medical services.

(c) The paired frequencies 463.075/468.075, 463.100/468.100, 463.125/468.125, 463.150/468.150, and 463.175/468.175 MHz are primarily assignable for communications between medical facilities, vehicles, and personnel related to supervision and instruction for treatment and transport of patients in the rendition and delivery of medical services. On a secondary basis, subject to non-interference to the foregoing, these frequencies may be utilized for any other permissible communications purposes, authorized for medical services, including bio-medical telemetry.

(d) The frequencies 458.025, 458.075, 458.125, and 458.175 MHz are assignable only for use in bio-medical telemetry/voice systems to transmit from a portable unit to an ambulance for automatic retransmission (mobile repeater) from a patient to a hospital or other medical-care facility. These frequencies are shared for highway radio call box operations with stations in the Local Government Radio Service, and are limited to the same transmit output power of one watt.

30. The provisions for use of these UHF allocations incorporate the features desired for medical systems as developed in the studies and recommendations we have considered. For example, for those users requiring additional telemetry capability, coordinated system planning should now enable them to utilize as many as eight frequency pairs for this purpose. On the other hand, if it is locally determined and mutually agreed within a medical service area to use all channels for medical purposes other than telemetry, the eight pairs of 463/468 MHz channels may be so utilized by taking advantage of both the primary and secondary usage provisions. To facilitate this flexibility, the Commission intends to assign these eight contiguous frequency pairs in a "block" to enable licensees to use all of the channels involved and to modify use of any of the frequencies to meet changing system requirements. Further, the rules will require licensees to employ multi-channel equipment that is designed for use of any of these frequencies, or all of them, if necessary. This will contribute to greater efficiency in selection and utilization of channels, and will enable licensees to be compatible for participation in the development of common systems under medical communication plans. Equipment of this nature is already in use to some extent in present bio-medical telemetry operations, and we have been assured by manufacturers that required equipment can be made generally available within a short period.[6]

31. The problem of how, if at all, to use the highway call box frequencies in connection with medical systems has been resolved by making the 458 MHz band highway call box channels available to be shared for extended portable telemetry operations. This shared use, when limited to one-watt power, appears to be compatible and answers the requirement for duplex capability for portable operation sought in a number of pending applications for bio-medical telemetry systems. Further, as noted in a number of comments, when used for highway radio call box operations, these frequencies will be invaluable in providing citizens access to EMS systems.

32. New rules for operations on UHF frequencies will permit the use of mobile relay stations for extending the transmission range of mobile service communications. Fixed-repeater station operations may be authorized only on frequencies available to operational-fixed stations (generally, frequencies in the 72–76 MHz band, and frequencies above 952 MHz; but, see also, § 89.101(p) for secondary fixed station frequencies in the 450–470 MHz band).

33. We have noted comments regarding certain specialized communication techniques on these UHF frequencies. Some parties plan to "multiplex" voice and telemetry tones to permit simultaneous full-duplex voice and medical telemetry transmission. This is a permissible technique already being employed in some currently authorized bio-medical telemetry systems. Tone-coded squelching methods are also being utilized in accordance with § 89.105 of the rules. "Trunking", for multiple-access of block-assigned frequencies, is a well recognized technique that requires no special authorization. Some parties plan to use television in certain medical communications applications. This technique is authorized in microwave frequency bands above 952 MHz which are available to all licensees in the Special Emergency Radio Service.

34. One type of operation we are not providing on these UHF frequencies is paging communications. Paging operations have generally proven to be incompatible with regular two-way radio

[6] A special showing of capability to meet these requirements will be required for type-acceptance of equipment.

systems shared on the same channels, and we are requiring that they be conducted on separate paging-only frequencies. It had been proposed that frequencies in the 449.850–449.950 MHz band be reallocated for these paging operations. These frequencies are presently available primarily for government radiolocation operations and, secondarily, for amateur stations. However, under treaty agreements to which the U.S. is a party, use of these frequencies is restricted along border areas. Further, there is no apparent need for paging to be conducted on UHF frequencies and these operations will be permitted instead in lower frequency bands, as discussed with respect to VHF frequency allocations.

VHF FREQUENCY ALLOCATIONS

35. The Commission has covered in some detail the limitations of the 150 MHz VHF band for meeting EMS system requirements. Essentially, we believe the solution lies in the use of 450–470 MHz UHF band frequencies, where full-capacity systems can be developed, and we anticipate that most new medical systems will be established in that part of the spectrum. Nevertheless, practically all present medical communications are being conducted in the VHF region, and it is recognized that these operations will remain intact for some time to come. To somewhat ameliorate the communication difficulties of these systems, a number of rule changes applicable to VHF operations have been adopted, as follows.

36. In Docket 19643, we considered whether to prohibit paging operations on regular two-way voice channels in the VHF band. As noted, paging communications have been demonstrated to be disruptive to voice operations on these frequencies, and it was proposed to allocate the frequency 157.450 MHz exclusively for low-power (30 watts), limited-area, hospital paging operations. This proposal is being adopted. In addition, the frequencies 152.0075 and 162.6625 MHz were recommended for medical system operations in the IRAC report and are suitable for wide-area paging operations. These frequencies are also being allocated for paging.

37. New medical paging systems will be authorized on the foregoing VHF band frequencies being made available and also on the present high-band hospital paging channels, 35.64, 35.68, 43.64 and 43.68 MHz, which we are modifying to make them generally assignable by deleting the hospital limitation. Present paging operations on other frequencies may be continued until January 1, 1980, subject to not causing harmful interference to regular two-way voice operations. Authorized paging is limited to one-way operations and no provision is being made for response on paging frequencies, since such operations minimize the effectiveness and availability of these frequencies.

38. IRAC had proposed that the government frequencies 150.7 and 150.7 MHz be made available for low power medical paging systems since they are limited to five watts output power. However, with this power, these frequencies are unsuitable for extended-area paging operations. They do, however, meet the requirement for communicating from a portable (hand-carried) unit (not from a vehicle) to an ambulance or other emergency vehicle for automatic retransmission (mobile-repeater) to a base station facility on a regular mobile frequency; and provision is included for this usage.

39. IRAC had also proposed that the frequency 155.340 MHz be reallocated for common calling purposes. However, this frequency is presently extensively authorized for general hospital operations and there were a number of objections to changing from this use. We are retaining this channel for general medical services, but will also permit it to be designated by common consent as an inter-system mutual assistance frequency under area-wide medical communications plans.

40. Finally, we have looked at the problem of interface between VHF and UHF systems. This will take on increasing importance as new UHF systems begin to emerge. Accordingly, we have determined to include as part of the rules covering mobile relay stations (§ 89.523(a)) provisions to permit cross-band mobile relay operations as required for coordination between VHF and UHF systems.

SUMMARY

41. The specific rule changes adopted in this proceeding are set forth in the attached Appendix B. Essentially, these amendments follow recommendations and proposals from the Office of Telecommunications Policy and other parties who sought establishment of a new radio service to cover operations for medical services. The new rules provide a Medical Services category in the Special Emergency Radio Service. This category authorizes licensing and operation of medical radio communication systems for the rendition and delivery of medical care to the public. Expanded eligibility provisions include, in addition to hospitals, physicians, and ambulance operators, facilities such as public health organizations, nursing homes, and other institutions and organizations which regularly provide medical services. Additional frequencies, primarily in the 450–470 MHz UHF frequency band, are allocated for medical services operations. Emphasis is placed upon flexibility in permissible communications with primary and secondary uses permitted to meet differing requirements in different areas. Allocations include two frequency pairs at 460/465 MHz for dispatch and common calling or mutual aid communications; three frequency pairs at 463/468 MHz, available primarily for bio-medical telemetry operations, and secondarily for other medical requirements; five additional frequency pairs at 463/468 MHz, available primarily for general medical requirements, and secondarily for telemetry and other medical or medically-related communications; and four frequencies at 458 MHz (shared for highway call box operations) for extended portable operations in telemetry systems. Present VHF frequency allocations are retained and are augmented by three additional frequencies for one-way medical paging systems; and two low-power frequencies at 150 MHz are available for extended portable operations. Mobile relay operations which are presently precluded in the SERS, are authorized in the UHF bands and, also, to a limited extent, on VHF frequencies when required to cross-band UHF and VHF medical communication systems. Frequencies for use in Medical Services are shared by all licensees in an area. It is expected, therefore, that the most efficient and effective use of new frequencies being made available in the UHF bands will only result from user cooperation in the development of common systems involving the establishment of central-dispatch and control centers for coordinated EMS operations under area-wide communication plans. Such common system promote full-capacity operations and are emphasized and encouraged in the new rules.

CONCLUSION

42. In consideration of the foregoing, the Commission finds that adoption of the rule changes proposed in Docket 19576, Docket 19643, and Docket 19880, as modified herein, will serve the public interest, convenience and necessity.

43. Accordingly, pursuant to authority contained in Sections 4(i) and 303(r) of the Communications Act of 1934, as amended, *It is ordered*, That, effective August 15, 1974, Parts 2 and 89 of the Commission's rules are amended as shown in the attached Appendix B. *It is further ordered*, That these proceedings are terminated.

Adopted: July 2, 1974.

Released: July 16, 1974.

(Secs. 4, 303, 48 Stat., as amended, 1066, 1082; 47 U.S.C. 154, 303)

FEDERAL COMMUNICATIONS COMMISSION,
VINCENT J. MULLINS,
Secretary.

APPENDIX A

A. COMMENTS AND REPLY COMMENTS IN DOCKET 19880

Alabama Department of Public Health
Althoff, Thomas H.; Sylvania, Ohio
American Association of State Highway & Transportation Officials, Inc.
American College of Emergency Physicians
American College of Surgeons
American Hospital Association
American Medical Association
American Radio Relay League, Inc.
American Trauma Society
Arapahoe Radio Club, Englewood, Colorado
Arkansas Department of Health
Associated Public-Safety Communications Officers, Inc.
Aurora FM Amateur Radio Repeater Association, Inc., Aurora, Ill.
Beaufort-Jasper Comprehensive Health Services, Inc.
Berryessa Amateur Radio Klub, Inc., Sacramento, Calif.

Bloethe, William G.; Ames, Iowa
Brandt, Henry Robert
Brask, Thomas B.; New Haven, Connecticut
Burnett, Joseph D., Jr.; Aurora, Colorado
California Department of Health
Capital Area Comprehensive Health Planning Council, Inc.; Richmond, Va.
Capwell, Allen; Sheriff, Wyoming County, New Jersey
Clark County Nevada District Health Department
Collins, Lewis D.; Arlington, Massachusetts
Colorado Council of Amateur Radio Clubs, Inc. (CCARC)
Community Emergency Care, Inc.
Connecticut Advisory Committee on Emergency Medical Services
Connecticut Hospital Association
Delaware County Emergency Health Services Council, Inc.
Denver Radio Club, Inc.
Durante, James M.; Elgin, Illinois
Electronics Industries Association, Land Mobile Section, Communications & Industrial Electronics Division (EIA)
Emergency Department Nurses Association, Upland, Pa.
Emergency Medical Services Administrators Assn. (EMSSA)
Fair, Joseph; Littleton, Colorado
Florida Department of General Services, Div. of Communications
Florida Department of Transportation
General Electric Company
Glass, Clyde E.; Loveland, Colorado
Grauer, Paul; Wilson, Kansas
GTE Service Corporation
Haldeman, Ellwood W.; Philadelphia, Pa.
Hashimoto, Lloyd K.; Laramie, Wyoming
Hospital Council of Northern California (HCNC)
Houston, Texas Fire Department
Illinois Department of Public Health, Div. of EMS & Highway Safety
Illinois Hospital Association
Illinois Repeater Council
International Bridge, Tunnel and Turnpike Assn. (IBTTA)
Interational Municipal Signal Association (IMSA)
Kaatz, Gary F.; Streamwood, Illinois
Kansas City Amateur Radio Club, Inc.
Kelsey, Willima F.; Chino, California
Koons Robert L.; Englewood, Colorado
Lambrew, Costas T., M.D.; Stony Brook, New York
Levy, Robert S., Aurora, Colorado
Lifland, Thomas A.; Cedarhurst, New York
Long Island Mobile Amateur Radio Club, Inc.
Louisiana Hospital Association
Manson, D. J.; Missouri Repeater Council
Massachusetts General Hospital
Massachusetts Institute of Technology, UHF Repeater Association
Mayo Clinic, Emergency Care Clinic, Rochester, Minnesota
Mennen-Greatbach Electronics, Inc.
Merrill, Charles; Santa Monica, California
Mid-America FM Association, Inc.
Mid-States Repeater Society
Mo-Kan Amateur Repeater Club
Motorola, Incorporated
Mount Vaca Radio Club, Inc.
Nagel, Eugene L., M.D.; Miami, Florida
Nassau County Police Department
National Association of Business & Educational Radio (NABER)
National Ski Patrol System, Inc.
Nelsch, Donald R.; Cuyahoga Falls, Ohio
New England Council for EMS Communications Committee
New Jersey Hospital Association
New Mexico Regional Medical Program
New York Department of Health
New York State Technical Advisory Committee (STAC)
North Carolina FM Repeater Association, Inc.
Northeast Repeater Association, Inc.
Northern California Chapter of Associated Public-Safety Communications Officers, Inc. (NCAPCO)
Northwestern Nevada Emergency Medical Services Council
Owens, J. Cuthbert, M.D.; Denver, Colorado
Parma Radio Club, Cleveland, Ohio
Peavler, Robert J.; Kirksville, Missouri
Philadelphia Health Management Corporation
Porrett, Edward C.; Arlington Heights, Illinois
Reynolds, Howard W.; Hagerstown, Maryland
Rule, Robert R.; Laramie, Wyoming
San Antonio/Bexar County Emergency Medical Services Council
San Francisco Department of Electricity
Sarasota Fire Department
Schlesinger, Gordon; San Diego, California
Spectra Associates, Inc.
State of Colorado
Tele-Engineering Corporation
Tennessee Department of Health, EMS Division
Texas Medical Association
Tri-Med, Charleston, South Carolina
Tulsa Repeater Organization, Inc.
Turner, John, M.D.; Jacksonville, Fla.
U.S. Department of Health, Education, & Welfare
U.S. Department of Transportation
Vogt, Fred B., M.D.; Austin, Texas
Welch, Eugene E.; Waseca, Minnesota
Western Massachusetts Health Planning Council, Inc.
Widmer, Rex; Kansas City, Missouri
Wisconsin Emergency Medical Services Program, University of Wisconsin-Madison
Zwisler, C. F., Jr.; Mankato, Minnesota

REPLY COMMENTS (19880)

American College of Cardiology
American Radio Relay League
Associated Public-Safety Communications Officers, Inc.
Colorado Council of Amateur Radio Clubs, Inc.
Communication Specialties Company, Aurora, Colorado
Emergency Medical Services Systems Subcommittee on Communications of the Interagency Committee on EMS Systems
Florida Department of General Services, Div. of Communications
Illinois Chapter of Associated Police Communication Officers, Inc.
Minnesota Mining and Manufacturing Company.
National Association of Business & Educational Radio, Inc. (NABER)
Rochester Regional Medical Program
Vogt, Fred B.; Austin, Texas

B. COMMENTS AND REPLY COMMENTS IN DOCKET 19643

Acadian Ambulance Service, Morgan City, La.
Andrew Corporation
American Hospital Association
Arizona State Department of Health
Arnot-Ogden Memorial Hospital, Elmira, N.Y.
Associated Public Safety Comunications Officers
Baton Rouge General Hospital
Bethesda-Chevy Chase Rescue Squad, Inc.
Beth Israel Hospital, Passaic, N.J.
Bloomington Hospital, Bloomington, Ind.
Boulder County Sheriff's Department
Butterworth Hospital, Grand Rapids, Michigan
Caney Valley Memorial Hospital, Wharton, Texas
Colorado Search and Rescue Board
Community General Hospital, Thomasville, N.C.
Greater Cleveland Hospital Association
Holy Cross Hospital, Merrill, Wisconsin
Hospital Association of New York State
Hospital Association of Pennsylvania
Illinois Civil Defense Agency
Indiana Hospital Emergency Radio Network
Iowa Hospital Association, Inc.
Iowa State Department of Health
Kansas Hospital Association
Lafayette General Hospital, Lafayette, La.
Lancaster General Hospital, Lancaster, Pa.
Massachusetts Hospital Association
Memorial Hospital, Philadelphia, Pa.
Memorial Medical Center, Corpus Christi, Texas
Mercer Hospital, Trenton, New Jersey
Mid-America Regional Council, Kansas City, Mo.
Missouri Division of Health and Welfare
Multitone Electronics, Springfield, N.J.
National Association of Business and Educational Radio
New England Council of Emergency Medical Services
New Jersey Hospital Association
New Jersey State Department of Health
New York State Bureau of Emergency Medical Services
North Claiborne Hospital, Haynesville, La.
Northern California Chapter of Associated Public Safety Communications Officers, Incorporated
Oakland First Aid Squad
Oklahoma Trauma Research Society, Inc.
Radiocall Paging Service, Oklahoma City, Okla.
Rapides General Hospital, Alexandria, La.
Research Hospital and Medical Center, Kansas City, Miss.
Roman Memorial Hospital, Salisbury, N.C.
Spectra Associates, Inc.
Spohn Hospital, Corpus Christi, Texas
St. Francis Hospital, Tulsa, Oklahoma
St. John Medical Center, Steubenville, Ohio
St. Mary's Hospital, Reno Nevada
St. Vincent Hospital, Santa Fe, N. Mex.
Tennessee Department of Health
Tennessee Hospital Association
Terrebonne General Hospital, Houma, La.
Texas Hospital Association
Texas State Department of Health
Touro Infirmary, New Orleans, La.
Town and Country Animal Clinic, Newton, Kansas
Tri-State Regional Medical Program, Boston, Mass.
Turner, John; Jacksonville, Florida
Underwood Memorial Hospital, Woodbury, N.J.
University of Kansas Medical Center
U.S. Department of Health, Education, and Welfare
U.S. Department of Transportation
Valley Hospital, Ridgewood, N.J.
Vermont State Health Department
Warner Brown Hospital, El Dorado, Ark.
Western Massachusetts Health Planning Council
Wichita-Sedgwick County Department of Community Health
Wilmington Medical Center, Wilmington, Delaware

C. COMMENTS AND REPLY COMMENTS IN DOCKET 19576

Associated Public-Safety Communications Officers, Inc.
Beaufort Civil Defense Headquarters, Beaufort, S.C.
Beaufort-Jasper Comprehensive Health Service, Inc., Beaufort, S.C.
Candler General Hospital, Savannah, Georgia
Central Virginia Community Health Center
Community Health Project, Hayneville, Ala.
County Council of Beaufort County, Beaufort, S.C.
Georgia Hospital Association
Health Co., Inc., Soul City, N.C.
Jackson Hinds Comprehensive Health Center

Jasper County Council, Ridgeland, S.C.
Jasper County General Hospital
Keyserling, Ben H., M.D., Beaufort, S.C.
Low County Regional Planning Council, Yemassee, S.C.
Maricopa Community Health Network
Medical University of South Carolina
National Association of Business and Educational Radio
National Ski Patrol System, Inc.
Saint Joseph's Hospital, Savannah, Ga.
Sangre de Cristo Health Systems
Savannah State College, Savannah, Ga.
Sea Island Comprehensive Health Care Corp., John's Island, S.C.
Southeastern Kentucky Regional Health Demonstration, Inc.
U.S. Department of Health, Education, and Welfare
U.S. Office of Economic Opportunity.
Wallace, L. W., Sheriff of Beaufort County

APPENDIX B

Parts 2 and 89 of Chapter I of Title 47 of the Code of Federal Regulations are amended as follows:

A. Part 2 (Frequency Allocations and Radio Treaty Matters; General Rules and Regulations):

1. In § 2.106, new footnote US216 is added in column 6 of the table for the frequency bands 150.05–150.8, 150.8–157.0375, 162.0125–173.2, and 450–470 MHz; and new footnote NG111 is added for the frequency band 157.1875–162.0125 MHz. Columns 5 and 6 of the table and the listing of footnotes are amended to read as follows:

§ 2.106 Table of frequency allocations.

* * * * *

UNITED STATES

Band (MHz) 5	*Allocation* 6
* * *	* * *
150.05–150.8	G (US216)
150.8–157.0375	NG (US216)
* * *	* * *
157.1875–162.0125	NG (US77) (US200) (NG111)
162.0125–173.2	G (US8) (US11) (US13) (US216)
* * *	* * *
450–470	NG (US87) (US100) (US201) (US209) (US216)
* * *	* * *

* * * * *

US216. The bands 150.7675–150.7975, 152–152.0150, 162.6500–162.6750, 460.5125–460.5625, 462.9875–463.1875, 465.5125–465.5625 MHz may be used for Government or Non-government operations in medical radio communications systems.

* * * * *

NG111. The band 157.4375–157.4625 MHz may be used for one-way paging operations in the Special Emergency Radio Service.

* * * * *

B. Part 89 (Public Safety Radio Services):

2. In § 89.259(f), the frequency chart is amended by deleting the frequencies 460.525 and 460.550 MHz, paragraph (g)(11) is amended and (g)(13) is deleted. The amended text reads as follows:

§ 89.259 Frequencies available to the Local Government Radio Service.

* * * * *

(f) * * *

Frequency or band	Class of station(s)	Limitations
*	*	*
458.975	do	4, 5, 7
470.512	Base and mobile	12
*	*	*

(11) Available for the class of stations designated for communications related to safety on highways in accordance with the provisions of § 89.102(b). Those frequencies utilized for transmissions from highway call box installations are also available for medical services mobile station operations in the Special Emergency Radio Service. (See § 89.525(b)(11).)

* * * * *

3. In § 89.359, the frequency chart in (f) is amended by deletion of the frequencies 460.525, 460.550, 465.525 and 465.550 MHz, and in (g), subparagraph 10 is deleted and shown as reserved. The chart as amended reads as follows:

§ 89.359 Frequencies available to the Fire Radio Service.

* * * * *

(f) * * *

Frequency or band	Class of station(s)	Limitations
*	*	*
458.950	do	2, 4
460.575	Base and mobile	1, 2
460.600	do	1, 2
460.625	do	1, 2
465.575	Mobile only	1, 2, 4
*	*	*

* * * * *

4. Subpart P (§§ 89.501—89.525) is revised to read as follows:

Subpart P—Special Emergency Radio Service

Sec.
89.501 Availability of service.
89.503 Medical services.
89.505 Rescue organizations.
89.507 Veterinarians.
89.509 Disaster relief organizations.
89.511 School buses.
89.513 Beach patrols.
89.515 Establishments in isolated areas.
89.517 Communication standby facilities.
89.519 Emergency repair of public communications facilities.
89.521 Points of communication.
89.523 Station limitations.
89.525 Frequencies available to the Special Emergency Radio Service.

AUTHORITY: Secs. 4, 303, 48 Stat., as amended, 1066, 1082; 47 U.S.C. 154, 303.

Subpart P—Special Emergency Radio Service

§ 89.501 Availability of service.

Special Emergency Radio Service is available only to the extent and for the purposes described in succeeding sections of this subpart. The eligiblity requirements, classes of stations available to each eligible group, permissible communications in accordance with eligibility, and other applicable conditions of use are set forth as separate sections of this subpart.

§ 89.503 Medical services.

(a) *Eligibility.* Licenses will be granted under this section only to the following described persons, and only for the purpose of conducting radio operations for the delivery or rendition of medical services to the public:

(1) Hospital establishments that offer services, facilities and beds for use beyond 24 hours in rendering medical treatment.

(2) Institutions and organizations regularly engaged in providing medical services through clinics, public health facilities, and similar establishments.

(3) Ambulance companies regularly engaged in providing medical ambulance services.

(4) Rescue organizations, to participate in activities for providing medical services.

(5) Associations comprised of two or more of the organizations eligible under paragraph (a)(1), (2), (3) and (4) of this section, for the purpose of coordination of the medical services communication activities of such organizations.

(6) Physicians, schools of medicine, and oral surgeons, which may include an association of physicians or oral surgeons in a locality (such as a county, city, or metropolitan area), which is chartered by a national, State, or regional association of physicians or oral surgeons, provided that such association shall be subject fully to the provisions of § 89.13 governing the cooperative use of radio stations in the mobile service, and provided further, that stations authorized to such associations must be used only for messages related to the medical activities of its members.

(7) Governmental entities and agencies for providing or coordinating medical services communication activities.

(b) *Eligibility Showing.* Initial applications under this section shall be accompanied by a statement describing the basis of the applicant's eligibility for licensing and the nature and extent of the proposed medical services radio operations. In the event that applicant is participating in an area-wide medical communications plan which provides central dispatch of radio operations for two or more entities eligible for licensing under this section, the plan may be filed with the application. A listing of current plans will be made available upon request to applicants and other interested parties in connection with the development of radio communications systems for medical services. In addition, copies of plans will be maintained for public inspection in the license records of the Commission's Washington, D.C. offices.

(c) *Class and number of stations available.* (1) The number and classes of stations which may be authorized will be dependent upon the frequencies selected

and the demonstrated system requirements.

(2) Subject to the provisions of § 89.157, communication units of a mobile station authorized under this section may be installed in a vehicle or be hand-carried for use by any person with whom cooperation or coordination is required for medical services activities.

(d) *Permissible communications.* Except for test transmissions as permitted by § 89.151(e), stations may be used primarily for the transmission of messages necessary to rendition or delivery of medical services. On a secondary non-interference basis, stations may be used for the transmission of messages related to the efficient administration of organizations and facilities engaged in medical services operations.

§ 89.505 Rescue organizations.

(a) *Eligibility.* Persons or organizations operating a rescue squad are eligible in this service.

(b) *Eligibility showing.* The initial application from a person or organization operating a rescue squad shall be accompanied by a statement describing the radio communication facilities desired and indicating how they would be used to enhance the safety of human life in the service being rendered. The statements also shall indicate the number of vehicles actually engaged in the emergency operation.

(c) *Class and number of stations available.* Each rescue squad normally may be authorized to operate not more than one base station and a number of mobile units, excluding mobile units of the hand or pack carried type, not in excess of the number of vehicles actually engaged in the emergency operation. Mobile units of the hand carried or pack carried type may be authorized to an extent not to exceed two such units for each radio equipped rescue squad vehicle. Additional base stations or mobile units will be authorized only in exceptional circumstances when the applicant can show a specific need therefor.

(d) *Permissible communications.* Except for test transmissions as permitted by § 89.151(e), stations licensed to rescue squads may be used only for the transmission of messages pertaining to the safety of life or property and urgent messages necessary for the rendition of an efficient emergency rescue service.

§ 89.507 Veterinarians.

(a) *Eligibility.* A veterinarian or a school of veterinary medicine is eligibile under this section.

(b) *Eligibility Showing.* The initial applications of persons eligible under this section shall include a statement in sufficient detail to permit a determination of the applicant's eligibility.

(c) *Class and number of stations available.* Each veterinarian or school of veterinary medicine may normally be authorized to operate one base station and two mobile units. Additional base stations or mobile units will be authorized only in exceptional circumstances.

(d) *Permissible communications.* Except for test transmissions permitted by § 89.151, stations authorized under this section may be used only for the transmission of messages pertaining to the safety of life or property and urgent messages relating to medical duties of the licensee.

§ 89.509 Disaster relief organizations.

(a) *Eligibility.* Organizations established for disaster relief purposes and which have an emergency communications plan involving the use of radio are eligible in this service.

(b) *Eligibility showing.* The initial application from a disaster relief organization shall be accompanied by a copy of the charter or other authority under which the organization was established and a copy of the communications plan with a full explanation as to how the requested radio facilities would be used under such plan and integrated into any other communication facilities which normally would be available to assist in the alleviation of the emergency condition.

(c) *Class and number of stations available.* Disaster relief organizations may be authorized to operate an unlimited number of base, mobile and fixed stations.

(d) *Permissible communications.* Except for transmissions which are necessary for drills and tests as permitted by § 89.151(e), stations licensed to disaster relief organizations may be used only for the transmission of communications relating to the safety of life or property, the establishment and maintenance of temporary relief facilities, and the alleviation of the emergency situation during periods of actual or impending emergency, or disaster, and until substantially normal conditions are restored.

§ 89.511 School buses.

(a) *Eligibility.* Persons or organizations operating school buses on a regular basis over regular routes are eligible in this service.

(b) *Eligibility showing.* The initial application from a person or organization operating a school bus service shall be accompanied by a statement describing the radio communication facilities desired. The statement shall also indicate the school or schools being served and describe the area in which the service is operated. If the applicant is not a government subdivision the statement shall indicate the authority under which the school buses are being operated and the tenure of any contractual agreement in effect.

(c) *Class and number of stations available.* Each school bus operator normally may be authorized to operate not more than one base station and a number of mobile units not in excess of the total of the number of buses and maintenance vehicles regularly engaged in the school bus operation. Additional base stations or mobile units will be authorized only in exceptional circumstances when the applicant can show a specific need therefor.

(d) *Permissible communications.* Stations licensed to school bus operators may be used to transmit messages pertaining to either the efficient operation of the school bus service or the safety and general welfare of the students they are engaged in transporting.

§ 89.513 Beach patrols.

(a) *Eligibility.* Persons or organizations operating beach patrols having responsibility for life-saving activities are eligible in this service.

(b) *Eligibility showing.* The initial application from a person or organization operating a beach patrol shall be accompanied by a statement describing the radio communication facilities desired and the area served by the beach patrol. The statement shall also clearly indicate the proposed method of operation and the number and classes of stations required.

(c) *Class and number of stations available.* Eligibles in this category will be authorized to operate base, mobile, and fixed stations in the stated area served by the beach patrol. The number of such stations requested shall be fully justified in the eligibility showing.

(d) *Permissible communications.* Except for test transmissions as permitted by § 89.151(e) stations licensed to persons or organizations operating beach patrols may be used only for the transmission of messages pertaining to the safety of life or property.

§ 89.515 Establishments in isolated areas.

(a) *Eligibility.* Persons or organizations maintaining establishments in isolated areas where public communication facilities are not available and where the use of radio is the only feasible means of establishing communication with a center of population, or other point from which emergency assistance might be obtained if needed, are eligible in this service.

(b) *Eligibility showing.* The initial application requesting a station authorization for an establishment in an isolated area shall be accompanied by a statement describing the radio communication facilities desired, the applicant's need therefor, and the proposed method of operation, including the location, class of station and name of licensee of the station with which communication is requested. The statement shall also describe the status of public communication facilities in the area of the applicant's establishment and indicate the results of any attempts the applicant may have made to obtain public communication service. In the event radio communications service is to be furnished the proposed station by another station which is not licensed to the applicant, a statement shall be submitted from the licensee of the station involved indicating that the proposed service will be rendered.

(c) *Class and number of stations available.* Persons or organizations in this category may be authorized to operate

not more than one fixed station at any isolated establishment and in addition not more than one fixed station in a center of population.

(d) *Permissible communications.* Except for test transmissions as permitted by § 89.151(e), stations licensed for use at establishments in isolated areas may be used only during an actual or impending emergency endangering life, health or property for the transmission of essential communications arising from the emergency. The transmission of routine or non-emergency communications is strictly prohibited.

(e) *Communication service rendered and received.* (1) The licensee of a fixed station at an establishment in an isolated area shall make the communication facilities of such station available at no charge to any person desiring the transmission of any communication permitted by paragraph (d) of this section.

(2) For the purpose of providing the communications link desired the licensee of a fixed station at an establishment in an isolated area either may be the licensee of a similar station at another location or may obtain communication service under a mutual agreement from the licensee of any station in the Public Safety Radio Services or any other station which is authorized to communicate with the special emergency fixed station.

§ 89.517 Communication standby facilities.

(a) *Eligibility.* Persons or organizations operating communication circuits are eligible for standby radio facilities in this service: *Provided,* That the applicant can qualify under either of the following conditions:

(1) The applicant is a communications common carrier.

(2) The applicant is a person or organization operating communications circuits which normally carry essential communications of such a nature that any disruption thereof will endanger life or public property.

(b) *Eligibility showing.* The initial application from an eligible in this category proposing to operate a radio standby facility for other normal communication circuits shall be accompanied by a statement describing the radio communication facilities desired and the proposed method of operation. When appropriate, the statement shall include a description of the messages normally being carried and explain how a disruption thereof will endanger life or public property.

(c) *Class and number of stations available.* Eligibles in this category may be authorized to operate an unlimited number of fixed stations as standby radio facilities. Any such fixed station may be licensed for operation either at a specified location or at any temporary location within a specified area. In the latter case the area of desired operation must be specified by the applicant.

(d) *Permissible communications.* Except for test transmission as permitted by § 89.151 (e), stations licensed for communication circuit standby facilities may be used only during periods when the normal circuits are inoperative due to circumstances beyond the control of the user. During such periods the radio facilities may be used to transmit any communication which would normally be carried by the regular circuits.

§ 89.519 Emergency repair of public communications facilities.

(a) *Eligibility.* Communications common carriers are eligible in this service for radio facilities to be used in effecting expeditious repairs to interruptions of public communications facilites where such interruptions have resulted in disabling intercity circuits or service to a multiplicity of subscribers in a general area.

(b) *Eligibility showing.* The initial application from a communications common carrier under the provisions of this section shall be accompanied by a statement describing the radio communications facilities desired and the proposed method of use under such emergency conditions as the applicant expects to arise. The statement shall aso clearly indicate the number and classes of stations required in the proposed operation.

(c) *Class and number of stations available.* Eligibles in this category may be authorized to operate base, mobile and fixed stations. The number of such stations requested shall be fully justified in the eligibility showing.

(d) *Permissible communications.* Except for test transmissions as permitted by § 89.519(e) stations authorized under the eligibility provisions of this section may be used only, when no other means of communication is readily available, for the transmission of messages relating to the safety of life and property and messages which are necessary for the efficient restoration of the public communication facilities which have been disrupted.

§ 89.521 Points of communication.

(a) Special emergency base stations are primarily authorized to intercommunicate with special emergency mobile stations. Special emergency mobile stations are primarily authorized to intercommunicate with base and other special emergency mobile stations.

(b) Special emergency base and mobile stations are secondarily authorized to intercommunicate with other stations in the Public Safety Radio Services and to transmit to receivers at fixed locations: *Provided,* That no harmful interference will be caused to the service of any station transmitting to a point of communication for which that station is primarily authorized.

(c) Special emergency fixed stations are authorized to intercommunicate with other stations in the Public Safety Radio Services and to transmit to receivers at fixed locations. Such stations are also authorized to intercommunicate with any other station which is authorized to communicate with the special emergency fixed station.

§ 89.523 Station limitations.

(a) Mobile relay stations will not be authorized in the Special Emergency Radio Service on frequencies below 450 MHz, except that cross-banded mobile relay operations will be permitted as required for coordination between very high frequency (VHF) and ultra high frequency (UHF) systems.

(b) Except for fixed stations operating on frequencies assigned under the provisions of limitation note 9 of § 89.525(f), each operator of a station in the Special Emergency Radio Service shall listen on the licensed frequency of the station prior to transmitting and shall not transmit until it has been reasonably determined that harmful interference will not be caused to any authorized communication in progress on the frequency.

(c) Where a radio station authorization in the Special Emergency Radio Service is held by a person or organization engaging in activities beyond the scope of those indicated in the eligibility provisions of this service the operation of such station shall be strictly confined to those activities on which the eligibility was established except for messages relating to the safety of life.

(d) Effective August 15, 1974, paging operations may be authorized in the Special Emergency Radio Services only on frequencies assigned under the provisions of limitation note 12 of § 89.525(f). Paging operations on other frequencies, authorized prior to August 15, 1974, may be continued for the balance of the license term then effective. In addition, such operation may be renewed for one additional five-year license term subject to the condition that harmful interference is not caused to regularly authorized operations in the Special Emergency Radio Service.

§ 89.525 Frequencies available to the Special Emergency Radio Service.

(a) The frequencies or bands of frequencies listed herein are available for assignment to stations in the Special Emergency Radio Service subject to the conditions and limitations of this section.

(b) The amount of separation between assignable frequencies listed in this section does not necessarily indicate the amount of frequency separation required for systems operation; accordingly, grants of adjacent channel assignments in all bands shall be in the discretion of the Commission.

(c) The operation of mobile systems in the Special Emergency Radio Service on frequencies below 450 MHz will normally be limited to only one frequency, except that (1) an additional frequency may be assigned for paging operations from those frequencies available in accordance with paragraph (f)(12) of this section; (2) an additional frequency may be assigned for mobile-repeater operations from those frequencies available in accordance with paragraph (f)(14) of this section; and (3) the frequency 155.340 MHz may be assigned as an additional frequency when it is designated as

a mutual assistance frequency as provided in paragraph (f)(18) of this section.

(d) Frequencies indicated normally for base and mobile stations in the Special Emergency Radio Service will be authorized to fixed stations also subject to the condition that harmful interference will not be caused to the mobile service.

(e) The following tabulation indicates the frequency or bands of frequencies, the class of station(s) to which they are normally available, and the specific assignment limitations, which are developed in paragraph (f) of this section:

Frequency or band	Class of station(s)	Limitations
kHz		
2000 to 3000	Fixed	9
2726	Base and mobile	10
3201	do	
MHz		
33.02	do	6
33.04	do	
33.06	do	6
33.08	do	
33.10	do	6
35.64	Base	12, 13
35.68	do	12, 13
37.90	Base and mobile	6
37.94	do	6
37.98	do	6
43.64	Base	12
43.68	do	12
45.92	Base and mobile	15
45.96	do	15
46.00	do	15
46.04	do	15
47.42	do	7
47.46	do	
47.50	do	
47.54	do	
47.58	do	
47.62	do	
47.66	do	
72.00 to 76.00	Operational fixed	3
150.775	Mobile only	14
150.790	do	14
152.0075	Base	12
155.160	Base and mobile	15
155.175	do	16
155.205	do	16
155.220	do	15
155.235	do	16
155.265	do	16
155.280	do	15
155.295	do	16
155.325	do	16, 17
155.340	do	15, 18
155.355	do	16, 17
155.385	do	16, 17
155.400	do	15, 17
157.450	Base	12, 21
162.6625	do	12
458.025	Mobile only	1, 11, 20
458.075	do	1, 11, 20
458.125	do	1, 11, 20
458.175	do	1, 11, 20
460.525	Base and mobile	1, 2, 8
460.550	do	1, 2, 8
463.000	do	1, 2, 4
463.025	do	1, 2, 4
463.050	do	1, 2, 4
463.075	do	1, 2, 19, 20
463.100	do	1, 2, 19, 20
463.125	do	1, 2, 19, 20
463.150	do	1, 2, 19, 20
463.175	do	1, 2, 19, 20
465.525	Mobile only	1, 2, 8
465.550	do	1, 2, 8
468.000	do	1, 2, 5, 20
468.025	do	1, 2, 5, 20
468.050	do	1, 2, 5, 20
468.075	do	1, 2, 19, 20
468.100	do	1, 2, 19, 20
468.125	do	1, 2, 19, 20
468.150	do	1, 2, 19, 20
468.175	do	1, 2, 19, 20
(For frequencies 952 MHz and above, see § 89.101.)		

(f) Explanation of assignment limitations appearing in the frequency tabulation of paragraph (e) of this section:

(1) For two-frequency systems, separation between base and mobile transmit frequencies is 5 MHz.

(2) For radio systems first authorized after August 1, 1974, the base-mobile frequencies 460.525, 460.550, 463.000, 463.025, 463.050, 463.075, 463.100, 463.125, 463.150, 463.175 MHz; and the mobile-only frequencies 465.525, 564.550, 468.000, 468.025, 468.050, 468.075, 468.100, 468.125, 468.150, 468.175 MHz will be assigned in a block for shared operations under § 89.503(a). Licensees operating on the paired 463/438 MHz frequencies in this block must utilize equipment that is type-accepted for eight-channel capacity, i.e., capability for all respective transmit or receive frequencies in either the 463 or 468 MHz band.

(3) The frequencies available in the band 72 to 76 MHz are listed in § 89.101 (c). These frequencies, which are shared with other services, are available only in accordance with the provisions of § 89.101.

(4) This frequency is primarily authorized for use under § 89.503(a), for communications from physicians and hospitals to medical care vehicles and personnel equipped with bio-medical telemetry capability to furnish instructions for patients' care. On a secondary basis, subject to non-interference to the foregoing types of operations, this frequency may be utilized for any other permissible communications consistent with § 89.503(d).

(5) This frequency is primarily authorized for use under § 89.503(a), for operation of mobile bio-medical telemetry units in ambulances and other medical-care vehicles, or when hand-carried by medical personnel. For these purposes, F2, F3, and F9 emissions may be authorized. On a secondary basis, subject to non-interference to regular telemetry operations, this frequency may be utilized for any other permissible communications consistent with § 89.503(d).

(6) This frequency is shared with the Highway Maintenance Radio Service.

(7) This frequency is reserved for assignment only to National organizations established for disaster relief purposes.

(8) This frequency is authorized for use under § 89.503(a) in the dispatch of medical-care vehicles and personnel for the rendition or delivery of medical services. Central-dispatch operations serving multi-system requirements in an area-wide medical radio communications plan is authorized and may include the designation of this frequency for intra-system and inter-system mutual assistance purposes.

(9) Appropriate frequencies in the band 2000–3000 kilohertz which are designated in Part 83 of this chapter as available to Public Ship Stations for telephone communication with Public Coast Stations may be assigned on secondary basis to special emergency fixed stations for communication with Public Coast Stations only, provided such stations are located in the United States and the following conditions are met:

(i) That such fixed station is established pursuant to the eligibility provisions of § 89.515 and that the isolated area involved is an island or other location not more than 300 statute miles removed from the desired point of communication and isolated from that point by water.

(ii) That evidence is submitted showing that an arrangement has been made with the coast station licensee for the handling of emergency communications permitted by § 81.302(b) of this chapter and § 89.515(d).

(iii) That operation of the special emergency fixed station shall at no time conflict with any provision of Part 83 of this chapter and further, that such operation in general shall conform to the practices employed by Public Ship Stations for radiotelephone communication with the same Public Coast Station.

(10) This frequency is shared with the State Guard Radio Service.

(11) This frequency is authorized for use under § 89.503(a) for telemetry or voice transmission with maximum transmitter output power of 1 watt from a portable telemetering unit to an ambulance for automatic retransmission (mobile-repeater) from a patient to a hospital or other medical care facility. This frequency is also available in the Local Government Radio Service for highway radio call box operations. (See § 89.259(f) and (g)(11).)

(12) This frequency will be assigned only for one-way paging communications to mobile receivers. Transmissions for the purpose of activating or controlling remote objects on this frequency are not authorized.

(13) Prior to O ctober 1, 1974, no assignments will be made on the frequency 35.64 MHz within 40 miles of the center of Houston, Texas, Portland, Maine, Charleston, West Virginia, Boston, Massachusetts, and Binghamton, New York; or on 35.68 MHz within 40 miles of the center of Portland, Maine, Boston, Massachusetts, Binghamton, New York, and Charleston, West Virginia. The centers of cities are taken as the reference points indicated on pages 226–238 of the U.S. Department of Commerce publication "Air-Line Distances Between Cities in the United States."

(14) This frequency may be authorized for voice transmissions from a portable (hand carried) unit to an ambulance or other emergency vehicle for automatic retransmisson (mobile-repeater) on a regular mobile frequency to a base station facility. Operations on this frequency are limited to five watts output power.

(15) Available for assignment: *Provided,* That until further order of the Commission, application is accompanied by a written and signed statement that

licensees of all stations, excluding Special Emergency stations, located within a radius of 75 miles of the proposed location and authorized to operate on a frequency 30 kHz or less removed have concurred with such assignment, or is accompanied by an acceptable engineering report indicating that harmful interference to the operation of such existing stations will not be caused.

(16) Available for developmental operation: *Provided,* That (i) The proposed station location is removed by at least 40 miles from the station location of each other station, not including those authorized to other Special Emergency licensees, which is authorized to operate on frequencies 30 kHz or less removed; and

(ii) The application is accompanied by a written and signed statement that the licensees of all stations, excluding Special Emergency licensees, located within a radius of 75 miles of the proposed location and authorized to operate on a frequency 30 kHz or less removed have concurred with such assignment or is accompanied by an acceptable engineering report indicating that harmful interference to the operation of existing stations, excluding Special Emergency stations, will not be caused, together with a written statement that the licensees of all stations, excluding Special Emergency stations, located within a radius of 75 miles of the proposed station and authorized to operate on frequencies 30 kHz or less removed have been notified of the applicant's intention to request the assignment.

(17) This frequency is assignable only to those hospitals as described in § 89.503 (a)(1), and to those ambulances which submit a showing that they render coordination and cooperation with a hospital authorized on this frequency.

(18) This frequency is authorized for use under § 89.503(a) for the rendition and delivery of medical services, and may be designated by common consent as an inter-system mutual assistance frequency under an area-wide medical communications plan.

(19) This frequency is primarily authorized for use under § 89.503(a) for communications between medical facilities, vehicles, and personnel related to supervision and instruction for treatment and transport of patients in the rendition or delivery of medical services. On a secondary basis, subject to noninterference to the foregoing types of operations, this frequency may be utilized for any other permissible communications consistent with § 89.503, including biomedical telemetry transmission.

(20) The continuous carrier mode of operation is authorized for use of telemetry emission on this frequency.

(21) Operations on this frequency are limited to 30 watts transmitter output power.

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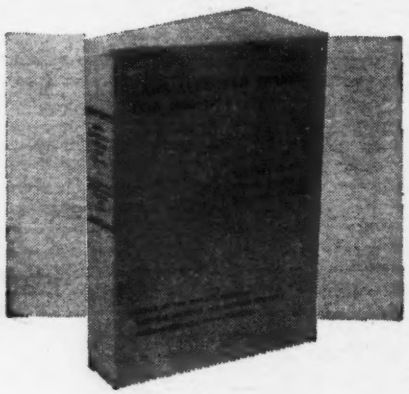
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